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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,827	12/04/2003	Richard M. Ehrlich	PANAP-1123US3	7492

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EXAMINER
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KO, DANIEL BOKMIN

ART UNIT	PAPER NUMBER
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2189

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/727,827	Applicant(s) EHRlich, RICHARD M.	
	Examiner Daniel B. Ko	Art Unit 2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This action is responsive to the application filed on 12/04/2003. Claims 1-10 have been submitted for examination.

#### ***Specification***

The cross reference to related application of the disclosure is objected to because of missing U.S. Patent Application Number. Please provide U.S. Patent Application No. of all the related applications.

#### ***Claim Objections***

Claim 2 are objected to because of the following informalities:

Regarding claim 2, line 4, "RRO" should be --Repeatable Run Out (RRO)--.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Chung (U.S. Patent 6,094,317).

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Regarding claim 1, Chung teaches a method for storing critical data in a hard drive, comprising:

identifying a plurality of critical sectors of a hard drive medium having critical data, the critical data likely to be requested in a pre-determined order upon the occurrence of a critical event (column 4, lines 46-65; identifying a critical sectors can be identifying a valid data sectors of Chung's invention); and

re-allocating the critical sectors into sequential order on the hard drive medium, the sequential order corresponding to the pre-determined order (column 5, lines 11-25).

Regarding claim 8, Chung teaches a method wherein identifying a plurality of critical sectors includes:

recording the sequence in which a plurality of critical sectors is previously requested by a host device (column 4, lines 18-24; A buffer memory stores data exchanged between the host computer and the disks).

Regarding claim 9, Chung teaches a method, further comprising:

detecting an occurrence of a critical event (column 4, lines 46-65; detecting a critical event can be detecting a valid data sectors of Chung's invention); and

reading the critical data from the re-allocated critical sectors (column 5, lines 11-25).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung (U.S. Patent 6,094,317) in view Codilian et al. (U.S. Patent 6,545,835 B1), hereinafter simply Codilian.

Regarding claim 2, Chung teaches the limitations of the claim as set forth for claim 1, above. However, Chung does not teach writing the data to a sectors having a smaller than typically accepted RRO. Codilian teaches the writing the data to a sectors having a smaller than typically accepted RRO (column 6, lines 13-31). At the time of invention it would have been obvious to a person of ordinary skill in the art to combine the Chung with Codilian. The motivation for doing so would have been an improved

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RRO compensation without significantly decreasing manufacturing throughput or unnecessarily increasing manufacturing costs (column 1, lines 51-55).

Regarding claim 3, Codilian teaches a method, wherein the smaller than typically accepted RRO is achieved by extensive use of RRO reduction techniques on final wedges (column 3, lines 65-67; column 4, lines 1-3; column 5, lines 48-50).

Regarding claim 4, Codilian teaches a method, wherein the smaller than typically accepted RRO is achieved by extensive use of a means for reducing the RRO (column 6, lines 13-31).

3. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung (U.S. Patent 6,094,317) in view Drouin (U.S. Patent Application 2004/0100712 A1).

Regarding claim 5, Chung teaches the limitations of the claim as set forth for claim 1, above. However, Chung does not teach writing the data to every other data track on the hard drive. Drouin teaches the writing the data to every other data track on the hard drive (paragraph 6). At the time of invention it would have been obvious to a person of ordinary skill in the art to combine the Chung with Drouin. The motivation for doing so would have been a decreasing read/write error on the disk drive by skipping tracks when writing the data to the sectors.

Regarding claim 6, Chung in view of Drouin teach a method, wherein said re-allocating the critical sectors includes:

reading the critical data from the critical sector (See Chung, column 4, lines 46-65; reading a critical sectors can be reading a valid data sectors of Chung's invention);  
and

writing the critical data to one of a plurality of sequential sectors, the sequential sectors having an extended inter-sector distance between them (See Drouin, paragraph 6).

4. Claim 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung (U.S. Patent 6,094,317) in view of Codilian et al. (U.S. Patent 6,751,041 B1), hereinafter simply Codilian 2.

Regarding claim 7, Chung teaches the limitations of the claim as set forth for claim 1, above. However, Chung does not teach writing the critical data to one of a plurality of sequential sectors at a slower than optimal speed. Codilian 2 teaches the writing the critical data to one of a plurality of sequential sectors at a slower than optimal speed (column 3, lines 9-20). At the time of invention it would have been obvious to a person of ordinary skill in the art to combine the Chung with Codilian 2. The motivation for doing so would have been reducing write errors on the disk drive by controlling a servo track write speed (column 2, lines 11-26).

5. Claim 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung (U.S. Patent 6,094,317) in view Sukegawa (U.S. Patent 5,860,083).

Regarding claim 10, Chung teaches a method for storing critical data in a hard drive, comprising:

identifying a plurality of critical sectors of a hard drive medium having critical data, the critical data likely to be requested upon the occurrence of a critical event;  
re-allocating the critical sectors into sequential order on the hard drive medium.

Chung does not teach a storing critical data location information in FLASH, the critical data location information relating to the location of the critical data on the hard drive medium. Sukegawa teaches a storing critical data location information in FLASH, the critical data location information relating to the location of the critical data on the hard drive medium (Fig. 1, Flash Memory Unit 1; column 2, lines 53-64). At the time of invention it would have been obvious to a person of ordinary skill in the art to combine the Chung with Sukegawa. The motivation for doing so would have been the retention of cache memory when the power is off because flash memory is a non-volatile memory that has a higher access speed than the HDD (column 1, lines 50-61).



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**Conclusion**

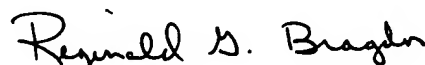
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel B. Ko whose telephone number is 571-272-8194.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald G. Bragdon can be reached on 571-272-4204. The fax phone number for the organization where this application or proceeding is assigned is 703-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel B. Ko  
AU 2189



REGINALD G. BRAGDON  
PRIMARY EXAMINER